

USSR

SHALIKOV, Sh. I.

"Information System for Collection, Storage and Input of Technological Data to a Computer"

Vopr. Kibernetiki [Problems of Cybernetics -- Collection of Works], No 53, Tashkent, 1972, pp 121-133 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V633, by the author).

Translation: The principle of construction suggested saves machine time and memory volume, while significantly reducing the number of peripheral devices and greatly simplifying the work of the operator.

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1/2 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--CN PRINCIPLES UNDERLYING SURGICAL TREATMENT OF GASTRIC AND DUODENAL
ULCERS -U-

AUTHOR--(04)-SHALIMOV, A.A., SAYENKO, V.F., ZAYTSEV, V.T., DALAVURAK, V.P.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 6, PP 23-28

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SURGERY, DUODENUM, DIGESTIVE SYSTEM DISEASE, SECRETION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3002/1770

STEP NO--UR/0531/70/000/000/0023/0028

CIRC ACCESSION NO--AP0129138

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129138

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. BOTH CLASSICAL GASTRIC RESECTION AND VAGOTOMY WITH DRAINAGE OPERATIONS OR WITH ANTRUMECTOMY ACCORDING TO RIGIDLY SUBSTANTIATED INDICATIONS SHOULD BE EMPLOYED IN SURGICAL TREATMENT OF PEPTIC ULCER. CLASSICAL RESECTION IS DONE IN THE ABSENCE OF DISTURBANCES IN THE FIRST PHASE OF GASTRIC SECRETION AND WITH AN ELEVATED OR NORMAL SECOND PHASE. SELECTIVE VAGOTOMY WITH ANTRUMECTOMY IS INDICATED IN HYPERSECTION BOTH DURING THE FIRST AND SECOND PHASES OF GASTRIC SECRETION. SELECTIVE VAGOTOMY WITH DRAINAGE OPERATION IS PERFORMED IN HYPERSECTION DURING THE FIRST STAGE OF SECRETION. THE RESTORATIVE STAGE OF THE OPERATION IS REALIZED WITH DUE ACCOUNT FOR PREDISPOSITION TO THE DUMPING SYNDROME. FROM 1966 UP TO JULY 1968 A TOTAL OF 181 OPERATIONS FOR PEPTIC ULCER WERE PERFORMED. IMMEDIATE AND LATE RESULTS OF THE SURGERY PROVED SATISFACTORY. FACILITY: NII OSHCHEY I NEOTLOZHNOY KHRURGII, KHAR'KOV.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--RADICAL OPERATION IN CANCER OF THE PAPILLA DUODENI REGION -U-
AUTHOR--SHALIMOV, A.A., SUMTSOV, N.A. S
COUNTRY OF INFO--USSR
SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 3, PP
32-39
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--SURGERY, CANCER, PANCREAS, DUODENUM, BILE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0852 STEP NO--UR/0589/70/104/003/0032/0039
CIRC ACCESSION NO--AP0102813
UNCLASSIFIED

2/2 022

CIRC ACCESSION NO--AP0102813

UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. CANCER OF THE PERIAMPULLARY ZONE (PANCREATIC HEAD, MAJOR PAPILLA DUODENI, DISTAL PORTION OF THE BILE DUCT AND DUODENUM IN THE REGION OF THE DUODENAL PAPILLA) OCCURS MORE FREQUENTLY THAN IT WAS CONSIDERED TO BE. IN THE CITY OF KHARKOV WITHIN A 9 YEAR PERIOD (FROM 1959 TO 1967) ON THE AVERAGE AN INTENSIVE INDEX OF MORTALITY DUE TO CANCER OF THE PANCREAS AND PERIAMPULLARY ZONE IS EQUAL TO 6.7 FOR 100,000 POPULATION. PANCREATODUODENAL RESECTION IS BELIEVED TO BE THE PRINCIPAL RADICAL SURGERY IN CANCER OF THE PERIAMPULLARY ZONE. ONE OF THE AUTHORS (A. A. SHALIMOV) HAS ELABORATED TWO VARIANTS OF PANCREATODUODENAL RESECTION AND PERFORMED 86 SUCH OPERATIVE PROCEDURES. THE POSTOPERATIVE MORTALITY WAS 31.4PERCENT. ELEVEN PERSONS (18.6PERCENT OF DISCHARGED PATIENTS) SURVIVED FOR OR OVER 5 YEARS AFTER THE OPERATION, TWO OF THESE PATIENTS SHOWED AN OVER 10 YEAR SURVIVAL.

UNCLASSIFIED

USSR

UDC 669.187.2:621.365.5

OKOROKOV, G. N., SHALIMOV, A. G., ANTIPOV, V. M., and TULIN, N. A.

Proizvodstvo Stali i Splavov v Vakuumnykh Induktsionnykh Pechakh (The Production of Steel and Alloys in Vacuum Induction Furnaces), Moscow, Metallurgiya, 1972, 191 pp

Translation of Annotation: The construction of various types of contemporary vacuum induction furnaces is described. Physicochemical processes are described which occur during smelting of steels and alloys in vacuum induction furnaces. Methods are proposed for intensification of reduction and refining of metals. A detailed characterization of the quality of metal is given. The book is intended for scientific workers, engineering-technical personnel, and highly qualified workers of metallurgy factories. It can be useful for students in advanced courses of metallurgical institutions of higher education. 98 illustrations, 64 tables, bibliography of 172 titles.

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OKOROKOV, G. N., et al., The Production of Steel and Alloys in Vacuum Induction Furnaces, Moscow, Metallurgiya, 1972, 191 pp

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USSR

UDC 669.046.5

SHIRER, G. B., KOMEL'KOV, V. K., VOINOV, S. G., SHALIMOV, A. G., PEGOV, V. G.,
MOLCHANOVA, A. A., TSIBUL'NIKOV, A. I., and MOKHIR, Ye. D.

"Refining of Ball Bearing Electrical and Martin Steels by Synthetic Lime-Alumina Slag with High Silica Content"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISIIS). (Collection of Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys), Izd-vo "Metallurgiya," No 61, 1970, pp 247-249

Translation of Abstract: Results are presented of the refining of ShKh15 steel melted in 100-ton electric furnaces using synthetic slag with high silica content in a ladle. With respect to sulfur content and the level of contamination by sulfide impurities, the obtained steel is similar to metal refined with conventional synthetic slag containing not more than 3% of silica, although the former is more contaminated with oxide and globular impurities. Data are presented on production testing of the described slag at a Martin plant, at which the quality of the 12KhMF and 20 K steels for pipes was found to be similar to a steel refined with the usual synthetic slag. The production cost of the slag with high silica content is given (It is approximately 30 rubles/ton cheaper than the ordinary slag). 3 tables.

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USSR

UDC:669.046.558.7

PEGOV, V. G., ANISIMOV, M. Ye., SHIRER, G. B., ABRAMOVA, A. A., KOMEL'KOV, V. K., MOLCHANOVA, A. A., VOINOV, S. G., SHALIMOV, A. G., and PRONICHKIN, A. A.

"Influence of Deoxidation of Metal With Silicocalcium and Addition of Soda to Synthetic Slag on Contamination of Type ShKh15 Steel With Nonmetallic Inclusions"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 215-226

Translation: When type ShKh15 steel is made in 100-T electric furnaces with treatment by synthetic slag in the ladle, the addition of 2.5-3.0% calcinated soda allows the content of oxygen in the steel to be reduced by 25% and the contamination with sulfides, oxide, and globular inclusions to be significantly reduced. Deoxidation of ShKh15 steel with silicocalcium 2.0-2.5 kg/T with simultaneous processing with synthetic slag decreases the content of sulfides and oxides, but causes an increase in the content of globular inclusions in the steel. 3 tables; 5 biblio. refs.

1/1

1/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--SLAG FORMING MIXTURE -U-

AUTHOR--(05)-KUKLEV, V.G., SHALIMOV, A.G., VOINOV, S.G., LUBENETS, I.A.,
ZHUKOV, D.G.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 262,923

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--04FEB70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--METALLURGIC PATENT, METALLURGIC SLAG, LIQUID METAL, SILICON
DIOXIDE, ALUMINUM OXIDE, IRON OXIDE, CALCIUM OXIDE, MAGNESIUM OXIDE,
SODIUM OXIDE, POTASSIUM OXIDE, CARBON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1058

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0130093

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0130093

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SLAG FORMING MIXT. FOR PROTECTING THE SURFACE OF A MOLTEN METAL ALLOY FROM COOLING AND OXIDN. DURING CASTING CONSISTED OF: SIO SUB2 36-50, AL SUB2 O SUB3 25-35, FEO 3-10, CAO 3-9, MGO 1-4, (NA SUB2 O PLUS K SUB2 O) 0.2-4, C 9-15, FLUORITE 1-6, AND NA SUB2 CO SUB3 1-7PERCENT. FACILITY: BARDIN, I. P. CENTRAL SCIENTIFIC RESEARCH INSTITUTE OF FERROUS METALLURGY.

UNCLASSIFIED

Welding

USSR

KOSOY, L. F., ~~SHALIMOV, A. G.~~, LYUEKOVSKIY, V. M., KUSHNIRENKO, B. N., and GANELIN, D. N.

"Surface Phenomena and Their Role in Welding High-Strength Steel of Increased Purity"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 7, 1970, pp 18-21

Abstract: The proposal that the surface tension of a metal has a significant effect on the depth of fusion during welding was stated earlier. The method of maximum gas pressure in a bubble was used to measure the surface tension of VP-25 steel in various steel-making procedures. VP-25 steel refined by synthetic slag at 1600°C has a surface tension 100-160 ergs/cm² higher than the same steel from an ordinary melt. This increased surface tension is connected with a reduction in the content of surface-active elements -- sulfur and oxygen -- as a result of refinement of the steel by synthetic slag. An especially sharp drop in the surface tension of this steel was observed with an increase in the sulfur content to 0.030%. Small additions of sulfur noticeably increased the depth of fusion of VP-25 steel. The nature of the relations obtained confirms the stated proposition for argon-arc welding. The mechanism of the effect of the purity of the metal with respect to the indicated admixtures is obviously the only one, and it does

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KOSOY, L. F., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 7, 1970, pp 18-21

not depend on the refining procedure. In order to increase the depth of fusion of the metal, special activating fluxes were proposed. Application of these fluxes during argon-arc welding of high-strength steels of increased purity resulted in a good-quality welded joint without increasing the welding current. The results of measuring the surface tension of VP-25 steel made by the two procedures are tabulated in the article, and graphs are presented showing the effect of sulfur on surface tension and on depth of fusion of VP-25 steel.

USSR

UDC 669.187.2.083

GOTIN, V. N., ZAYTSEV, B. YE., SHCHERBAKOV, A. I., ZHITKOV, N. K., OKOROKOV, G. N., BOYARASHINOV, V. A., VOYNOVSKIY, YE. B., TOPILIN, V. V., SHALIMOV, AL. G., OSIPOVA, L. M., CHERNOV, YU. V., ROZANOVA, T. S., and LAKTIONOV, V. S.

"Influence of Wall Thickness of Crystallizer and Consumption of Cooling Water on Conditions of Formation of Ingot During Vacuum Arc Remelting"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 178-180

Translation: In a vacuum arc furnace in a crystallizer (C) 160 mm in diameter with a current of 2.0-3.7 ka, the influence of wall thickness of C and temperature of cooling water on conditions of formation of ingot of complexly alloyed nickel-based alloys is studied. C with wall thicknesses of 30 and 18 mm were studied, the temperature on the outer surface of the C reaching 75°C in the first case, 105°C in the second. The temperature of the internal surface of the C was identical, 140-150°C. Neither a change in C thickness nor a change in water consumption from 11 to 22 m³/hr influenced the depth of the liquid metal bath, i.e., both repeated rolling of the C and reduced water consumption were permissible. 2 figures.

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USSR

UDC:669.187.5

ZAYTSEV, B. Ye., GOTIN, V. N., SHCHERBAKOV, A. I., SERGYEV, A. B., ZHITKOV, N. K., OKOROKOV, G. N., BOYARSHINOV, V. A., TULIN, N. A., VOYNOVSKIY, Ye. V., TOPILIN, V. V., POZDEYEV, N. P., SHALIMOV, A. I., OSIPOVA, L. A., CHERNOV, Yu. V., and RAZANOV, T. S.

"Specifics of Vacuum Arc Remelting of Nickel-Based Alloys and Stainless Steels With Reverse Arc Polarity"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 181-183

Translation: Results are presented from a study of vacuum arc remelting of nickel alloys in a crystallizer 380-480 mm in diameter with thermocouples calked in length and height. The rate of melting with reverse polarity is 20% higher with identical bath depth of liquid metal. This is a result of more intensive heat transfer from the walls of the crystallizer during melting with reverse polarity. The macrostructure, chemical composition N, O, H and mechanical properties of the metal produced by melting with forward and reverse polarity are identical. The ingot produced with reverse polarity had no corona. 2 figures; 1 table; 1 biblio. ref.

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- 15 -

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UR 9021

AUTHOR-- SHALIMOV, E.

TITLE-- MADE BY TRUSTWORTHY HANDS

NEWSPAPER-- SOVETSKAYA MOLDAVIYA, MARCH 8, 1970, P 1, COLS 1-5

ABSTRACT-- GALVANOMETERS PRODUCED BY THE "VIBROPRIBOR" PLANT IN
KISHENEV AID GEOLOGISTS, SEISMOLOGISTS AND PILOTS, SO CLAIMS THE
ARTICLE.

//

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19671147

172 032
UNCLASSIFIED
TITLE--DIPOLE RELAXATION OF LIQUID NITROANILINES --U- PROCESSING DATE--30OCT70
AUTHOR--(02)-LUTSKIY, A.YE., SHALIMOV, M.F.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 586-90
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ORGANIC NITRO COMPOUND, ANILINE, DIELECTRIC CONSTANT,
ENTHALPY, ENTROPY, HIGH FREQUENCY, COMPLEX COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0894
CIRC ACCESSION NO--AP0124557
STEP NO--UR/0076/70/044/003/0586/0590
UNCLASSIFIED

032
CIRC ACCESSION NO--AP0124557 UNCLASSIFIED PROCESSING DATE--30OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VALUES OF REAL AND IMAGINARY
COMPONENTS OF THE DIELEC. CONSTS. OF O, M, AND P-O SUB2 NC SUB6 H SUB4
NH SUB2 SELTS OVER 80-195DEGREES WERE MEASURED IN THE CM WAVE REGION (AT
4 WAVELENGTHS). CHARACTERISTICS OF THE DIPOLE RELAXATION OF THE
NITROANILINES (LOSS ANGLE TANGENT, RELAXATION TIME(TAU), FREE ENTHALPY,
ENTHALPY (DELTA H), AND ENTROPY OF ACTIVATION OF THE RELAXATION PROCESS)
WERE CALCD. THE NITRO ANILINES OBEY THE DEBYE EQUATION. IN COMPARISON
TO PHNH SUB2, TAU NITROANILINES WERE MARKEDLY HIGHER. THUS, AT
135DEGREES, TAU O, M, AND P-O SUB2 NC SUB6 H SUB4 NH SUB2 ARE 12, 14,
AND 34 TIMES, RESP., THAT OF PHNH SUB2. THE INTRODUCTION OF THE NO SUB2
GROUP INCREASES (ESP. IN PARA POSITION) DELTA H. THESE CHANGES ARE DUE
TO THE ASSOCN. OF ALL 3 ISOMERS BY INTERMOL. H BONDING NH O SUB2 N. THE
NITRO ANILINES HAVE A 2ND HIGH FREQUENCY DISPERSION REGION, THE
MECHANISM OF RELAXATION OF WHICH IS CONNECTED WITH ROTATION OF THE FREE
TERMINAL GROUPS OF THE MOL. IN THE COMPLEXES. FACILITY:
KHARKOV. POLITEKH. INST., KHARKOV, USSR.

UNCLASSIFIED

Nitrogen Compounds

USSR

UDC 547.821.824.07:542.953

PROSTAKOV, N. S., Kholdarova, T., Pleshakov, V. G., Govor, S. Ys., and
Shalimov, V. P., University of People's Friendship Imeni Patrice Lumumba,
Moscow

"Condensation of 1,2,5-trimethylpiperidone-4 With Ethyl- and Naphtyl-
acetylenes and Synthesis of Substituted Pyridines"

Riga, Khimiya Geterotsiklicheskikh Soyedinenii, No 3, Mar 73, pp 349-352

Abstract: 1,2,5-Trimethylpiperidone-4 condensed under conditions of Favorskii reaction with 1-butyne, α - and β -naphtylacetylene yields 4-(1-butynyl)- and 4-naphtylethynyl-1,2,5-trimethylpiperidols-4, which after hydrogenation over Raney nickel gave 4-n-butyl-, 4-(2 α -naphtylethyl)- and 4-(2 β -naphtylethyl)-piperidols-4. These piperidols can be converted to pyridine bases by dehydration, catalytic dehydrogenation and N-demethylation. In this fashion 2,5-dimethyl-4-phenylpyridine was obtained from 1,2,5-trimethyl-4-phenylpiperidience. Condensation of 2,5-dimethyl-4-phenylpyridine with formaldehyde yields 5-methyl-2-(β -hydroxyethyl)-4-phenylpyridine and 2-(5-methyl-4-phenylpyridyl-2)-propanediol-1,3. The first product was converted to the urethane N-phenyl- β -(5-methyl-4-phenylpyridyl-2)ethylcarbamate and dehydrated to 5-methyl-2-vinyl-4-phenylpyridine. 2,5-Dimethyl-4-n-butylpyridine

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USSR

PROSTAKOV, N. S., et al., Khimiya Geterotsiklicheskikh Soyedinenii, No 3, Mar 73, pp 349-352

condensed with formaldehyde gave 5-methyl-2-(β -hydroxyethyl)-4-n-butylpyridine which was dehydrated to 5-methyl-2-vinyl-4-n-butylpyridine. Two derivatives of this β -hydroxyethyl compound were prepared: N-phenyl- β -(5-methyl-4-n-butylpyridyl-2)ethylcarbamate and 5-methyl-2-(β -benzoyloxyethyl)-4-n-butylpyridine.

USSR

UDC [537.226+537.311.33]:[537+535]

SHALIMOVA, K. V., VORONKOV, E. N., and MURAV'YEV, L. N.

"Kinetic Study of Photoconductivity of Cadmium Telluride Films"

V sb. Tonkiye plenki soyedineniy tellura s metallami podgrupp tsinka i galliya (Thin Films of Tellurium Compounds With Metals of Zinc and Gallium Subgroups -- Collection of Works), Vil'nyus, 1970, p 22 (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE800 by authors)

Translation: A kinetic study was made of the photoconductivity of CdTe thin layers obtained by the method of vacuum condensation on various substrates. Basic parameters were determined for films annealed in Cd and Te vapor as well as those doped with elements of the first, third, and seventh groups of the periodic system of elements. The authors investigated the lux-ampere and relaxation photocurrent characteristics in the 100-400° K temperature range. On the basis of the results obtained an estimate was made of the trapping and recombination center parameters.

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1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EFFECT OF A STOICHIOMETRIC DEVIATION ON THE CRYSTAL STRUCTURE OF
CADMIUM SELENIDE THIN FILMS -U-
AUTHOR-(04)-SHALIMOVA, K.V., DMITRIYEV, V.A., ROGGE, K., BOTNEV, A.F.
COUNTRY OF INFO--USSR
SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 342-5
DATE PUBLISHED--70
SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--CADMIUM SELENIDE, METAL FILM, METAL VAPOR, SELENIUM, THERMAL
EFFECT, CRYSTAL STRUCTURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1569 STEP NO--UR/0070/70/015/002/0342/0345
CIRC ACCESSION NO--AP0125195
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSIGN NO--AP0125195

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF STOICHIOMETRY ON THE CRYSTAL STRUCTURE OF CDSE FILMS, 0.1-3 MU THICK, EVAPD. IN VACUO ONTO GLASS SUBSTRATES AT 90-455DEGREES WAS STUDIED. THE INFLUENCE OF THE HEAT TREATMENT IN CD OR SE VAPORS, AT 250-450DEGREES, AND THE SIMULTANEOUS EVAPN. OF CDSE PLUS SE OR CDSE PLUS CD ON THE FILM PROPERTIES WAS ALSO STUDIED; EXCESS CD AND SE CAUSES THE FORMATION OF THE HEXAGONAL AND CUBIC PHASE, RESP. OPERATING CONDITIONS ARE GIVEN FOR THE PRODUCTION OF THE SINGLE PHASE FILMS. FACILITY: MOSK. ENER. INST., MOSCOW, USSR.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--CRYSTAL STRUCTURE OF ZINC OXIDE OBTAINED BY OXIDIZING ZINC SULFIDE
THIN FILMS -U-
AUTHOR--(03)-SHALIMOVA, K.V., SATYBAYEV, N.M., DMITRIYEV, V.A.
COUNTRY OF INFO--USSR
SOURCE--KRISTALLOGRAFIYA 1970, 15(1), 200-I
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS, PHYSICS
TOPIC TAGS--ZINC SULFIDE, ZINC OXIDE, SOLID SOLUTION, CRYSTAL STRUCTURE, X
RAY DIFFRACTION, ELECTRON DIFFRACTION, VAPOR CONDENSATION, VACUUM
DISTILLATION, VACUUM SUBLIMATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/0517 STEP NO--UR/0070/70/015/001/0200/0201
CIRC ACCESSION NO--AR0119437
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AR0119437

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CHANGES IN THE ZNS THINFILM STRUCTURE WERE STUDIED BY ELECTRON AND X RAY DIFFRACTION. THE MAX. TEMP. WAS SOUGHT FOR WHICH ZNS (THICKNESS 1.0 MU, PREPED. BY VACUUM CONDENSATION) IS NOT OXIDIZED IN AIR. BY HEATING AT 550-600DEGREES FOR 1 HR, THE FORMATION OF A ZNO FILM OF HEXAGONAL MODIFICATION WITHOUT ANY ORIENTATION WAS OBSD. ON THE SURFACE OF THE ZNS. AFTER 4 HR AT 600DEGREES OR 2 HR AT 650DEGREES, COMPLETE OXIDN. OF THE ZNS WAS OBSD.; THE CRYSTALS OF ZNO FORMED WERE ORIENTED PARALLEL TO THE (0001) PLANE OF THE SUBSTRATE. ZNS-ZNO SOLID SOLNS. WERE NOT OBSD. FACILITY: MOSK. ENERG. INST., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 535.37:548.736

S
SHALIMOVA, K. V., KHIRIN, V. N.

"The Relative Quantum Yield of Green Photoluminescence by Cadmium Sulfide in the Case of a Complex Light-Absorption Mechanism"

Izvestiya Vysshikh Uchebnykh Zavedeniy Fizika, No 6, 1970, pp 54-59

Abstract: Keeping in mind the complex light-absorption mechanism in the spectral region of 4580-4910 Å, the authors consider two quantum yields of the green photoluminescence of polycrystalline films of cadmium sulfide. One of them is determined by intrinsic interzonal absorption, the other is determined by absorption in superstoichiometrically excess atoms of cadmium. A calculation of these quantum yields at 77° K is made for two groups of polycrystalline films, and it is shown that the spectral distribution of neither of these yields contains selective bands that are characteristic of spectra of the absorption, reflection, and excitation of green radiation.

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AN0034006

UR9008

FROM: FBIS Daily Report, Soviet Union, 2 March 1970, Vol III, Nr 41, p E 2
USSR

DEATHS OF TWO SOVIET GENERALS REPORTED

Col Gen Shalin

Moscow RED STAR 25 Feb 70 p 4 L

[Excerpts] Retired Col Gen Mikhail Alekseyevich Shalin has died after a long illness.

During the Great Patriotic War M.A. Shalin was chief of staff of a number of armies in operation on the West, the Kalinin, the Voronezh, and the First Belorussian fronts. In the postwar years M.A. Shalin occupied a number of responsible posts in the USSR Armed Forces General Headquarters. In the latter days of his service he was deputy chief of general headquarters.

(Signed) M.V. Zikharov, S.M. Shtemenko, M.T. Nikitin, P.I. Golikov, M.Ya. Katukov,
N.A. Nachinkin, P.I. Ivashutin, I.I. Gusevskiy, A.H. Zhilov, L.K. Bekrenov,
N.A. Korenyak, N.H. Popel, and A.A. Vartanyan.

19710636

USSR

UDC 535.854

MIROVITSKIY, D. I., SAMSONOV, G. A., SOBOLEV, G. A., and SHANIN, V. I.,
Moscow Institute of Radiotechnology, Electronics and Automation

"A Device for Processing the Optical Signals Scattered from Objects"

USSR Author's Certificate No 366444, Filed 22 Jan 71, Published 16 Jan 73
(from Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 7,
Mar (a) 73, Claim No 1617320/26-9)

Translation: A device for the processing of optical signals scattered from objects, containing a source of coherent radiation, an axial optical canal, consisting of a collimator, a phototransparency, a Dove prism and a lens for direct and reverse Fourier conversions with an adjustable filter mounted between them and a canal for formation of optical signals scattered from objects in a hologram, in series, distinguished by the fact that in order to increase the rapidity of signal processing in the basic optical canal a translucent mirror a lens, a hologram and a rotating mirror have also been placed in series, optically connecting the output of the collimeter with the adjustable filter, while the hollgram and the adjustable filter are recorded on a registering device, for example a thermoplastic.

1/1

(1)

USSR

YUKHTIN, N. N., FURSENKO, I. V., IVANOVA, N. S., SELEZNEV, A. P., SHALINA, N. A.

"Synthesis of N-3,4-Dichlorophenyl-N'-hydroxyurea"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protective Agents -- collection of works), No 2, Moscow, 1972, pp 59-65 (from RZh-Khimiya, No 19, Oct 73, Abstract No 19N546)

Translation: Experimental results are reported of the first stage in the synthesis of lynurone -- synthesis of N-3,4-dichlorophenyl-N'-hydroxyurea [I]. The relationship between the yield of I and the type of solvents has been investigated. Maximum yield of I has been achieved using the solvent system chlorobenzene-methanol-water 2:2:1. It has been shown that I is capable of reacting in two directions during its carbanoylation with 3,4-dichlorophenylisocyanate. NH_3 is passed through a solution of 8.61 g hydroxylamine sulfate in 60 ml water at 20° until pH of 7.4 is reached, MeOH is added, the reaction mixture cooled to 0-3°, 18.8 g of 3,4-dichlorophenylisocyanate in 121 ml ClPh is added, the mixture is left standing for 15 min., evaporated and filtered, yielding 20.6 g of 94% I.

1/1

- 54 -

USSR

UDC 632.95

YUKHTIN, N. N., SHCHELOKOV, B. I., and SHALINA, N. A.

"Detection of Impurities in Commercial Diuron and Theirs Characterization"

V sb. Khim. Sredstva zashchity rast. (Chemical Plant Protectants -- collection of works), vyp 1, Moscow, 1970, pp 301-304 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13N535 by O. A. Korotkova)

Translation: The principal impurities of commercial diuron are resins (0.5-4.2%), the hydrochlorides of Me_2NH (I) (0.3-0.6%), $\text{Me}_2\text{NCONMe}_2$ (II), $3,4\text{-Cl}_2\text{C}_6\text{H}_3\text{NHCONHMe}$ (III) and traces of $3,4\text{-Cl}_2\text{C}_6\text{H}_3\text{NH}_2$ (IV). The resins are formed in the phosgenation stage and in solution with $3,4\text{-Cl}_2\text{C}_6\text{H}_3\text{NCO}$ enter into condensation with Me_2NH , where they are deposited on the diuron suspension. I is obtained in the condensation stage as a result of incomplete blow-off HCl (gas). II is formed from the Me_2NH and Me_3N contained in the returned PhCl . The presence of III is due to the impurity MeNH_2 in commercial Me_2NH . IV apparently is a product of the reaction of $3,4\text{-Cl}_2\text{C}_6\text{H}_3\text{NCO}$ with small amounts of moisture.
1/1

- 59 -

USSR

UDC: 621.396.677(088.8)

TSALENCHUK, M. R., SAMARYANOVA, M. A., SHALINOVA, G. F., BYKOVA, T. A.,
IVANOV, A. F.

"A Device for Monitoring the Working Order of High-Frequency Channels"

USSR Author's Certificate No 265983, filed 10 Jun 68, published 3 Jul 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1B103 P)

Translation: The proposed device contains a two-terminal plug to which a high-frequency oscillator is connected with DC power supplies. To simplify and speed up the monitoring process, the oscillator and power supplies are enclosed in the housing of the plug holder.

1/1

USSR

UDC 543.422.4:547.79'546.183

SHAGDULLIN, R. R., ~~SHAITROV, I. KH.~~, PUDOVIK, M. A., and TERENT'YEVA, S. A.,
Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of
Sciences USSR, Kazan'

"Vibrational Spectra and Structure of Some Oxaazaphospholanes"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 12, Dec 71, pp 1612-1615

Abstract: A series of 2-chloro-2-oxo-1,3,2-oxaazaphospholanes was synthesized and their spectra were studied. To 15.3 g phosphorus oxychloride in 150 ml benzene kept at 15-20°, a mixture of 20.2 g triethylamine and 8.9 g 1-methylaminopropanol-2 was added dropwise with stirring. The reaction mixture was stirred for 2 hrs, the triethylamine hydrochloride was separated, benzene was evaporated, and the residue was vacuum-distilled, yielding 2-chloro-2-oxo-3,5-dimethyl-1,3,2-oxaazaphospholane, b.p. 90°/0.1 mm, d_4^{20} 1.2853, n_D^{20} 1.4602.

Analogously the 2-chloro-2-oxo-3-phenyl-1,3,2-oxaazaphospholane, m.p. 96-97° and 2-chloro-2-oxo-5-methyl-3-phenyl-1,3,2-oxaazaphospholane, m.p. 114-115° were obtained. IR spectra for model compounds have been reproduced, and band assignments have been made. On the basis of the changes observed in characteristic frequencies, going from trivalent phosphorus compounds to tetracoordinated ones, 1/2

- 75 -

USSR

SHAGIDULLIN, R. R., et al., Khimiya Geterotsiklicheskikh Soyedineniy, No 12,
Dec 71, pp 1612-1615

a conclusion was reached that changes in the ring conformation must have taken place: in the trivalent phosphorus compounds the ring is in form of an envelope with a pseudoaxial chlorine atom, while in the tetracoordinated phosphorus compounds an envelope is formed with a axial phosphoryl oxygen atom and an equatorial chlorine atom.

2/2

USSR

ZAKHAROV, YE. V., PIMENOV, YU. V., ~~SHALKINA, L. A.~~

"Algorithm for Numerical Solution of the Axisymmetric Problem of Electromagnetic Wave Diffraction by an Ideally Conducting Surface of Rotation"

Moscow, Vychislitel'nyye Metody i Programirovaniye XVI, 1971, pp 147-159

Abstract: A study was made of the axisymmetric problem of electromagnetic wave diffraction by ideally conducting, infinitely thin surfaces of rotation. The integral equations in this case are uniform, and the logarithmic singularity of the kernel for coincidence of the arguments permits application of the self-regularization method [V. I. Dmitriyev, et al., Vychisl. metody i programmirovaniye, No X, Moscow State University Press, 1968]. On the basis of the method of self-regularization, an algorithm for numerical solution of the corresponding equations is proposed which considers the nature of the behavior of the solution at the ends of the interval. The algorithm is analyzed as a function of the shape of the surface and frequency.

The algorithm described can be used to find the current density on the surface, after which the radiation pattern of the radiator in the presence of an ideally conducting surface of rotation can be calculated. This offers the possibility of determining the effect of a shield on the nature of the radiation. Sample normalized radiation patterns are presented for the case of a disc excited by magnetic and electric dipoles.

1/1

1/2 023 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--AUTOMATIC CONTROL SYSTEM FOR THE PROCESS OF ROASTING MATERIALS IN A
ROTARY KILN -U-
AUTHOR-(03)-KSENDOZOVSKIY, V.R., GOZENBUK, L.G., SHALMAN, L.M.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, OGNEUPORY, NO 3, MAR 70, PP 20-25

DATE PUBLISHED-----MAR 70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--ROASTING FURNACE, INDUSTRIAL AUTOMATIC CONTROL, TEMPERATURE
MEASUREMENT, GAS ANALYZER, PRESSURE MEASUREMENT, THERMODYNAMIC
EFFICIENCY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3006/0688

STEP NO--UR/0131/70/000/003/0020/0025

CIRC ACCESSION NO--AP0134430

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 023

CIRC ACCESSION NO--AP0134430
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. A ROTARY KILN CAN BE LOOKED UPON AS A SEQUENCE OF TWO OBJECTS FOR AUTOMATIC CONTROL. THE FIRST SECTION HEATS THE MATERIAL TO THE SINTERING TEMPERATURE BY HEAT EXCHANGE BETWEEN THE FLOWS OF THE HEAT TRANSFER MEDIUM AND THE MATERIAL. THE PHYSICAL AND CHEMICAL PROCESSES OF SINTERING OCCUR IN THE SECOND SECTION. THEREFORE, THE AUTOMATIC CONTROL SYSTEM FOR A ROTARY KILN MUST CONSIST OF TWO SYSTEMS. THE MEASURING DEVICES USED IN SUCH A DUAL SYSTEM TO MEASURE TEMPERATURE IN THE SINTERING ZONE AS INPUT OF RAW MATERIAL ARE DESCRIBED. IN ADDITION TO CHECKS OF TEMPERATURE AND RAW MATERIAL INPUT, THE PRESSURE IN THE HOT AND COLD HEADS OF THE FURNACE, RAREFACTION IN THE SMOKESTACK, GAS FLOW RATE, AND GAS PRESSURE ARE CHECKED. A STRUCTURAL DIAGRAM OF THE AUTOMATIC CONTROL SYSTEM IS PRESENTED. THE AUTOMATIC TESTING AND CONTROL SYSTEM FOR THE ROTARY KILN HAS BEEN CHECKED AT THE ZAPOROG REFRACTORY PLANT. THE RESULTS OF THE TESTS HAVE CONFIRMED THE EFFECTIVENESS AND ECONOMIC EXPEDIENCY OF USING THIS SYSTEM FOR AUTOMATION OF ROTARY KILN OPERATION.

UNCLASSIFIED

USSR

S
KSENDZOVSKIY, V. R., GOZENBUK, L. G., SHAL'MAN, L. M.

"Automatic Control System for the Process of Roasting Materials in a Rotary Kiln"

Moscow, Ogneupory, No 3, Mar 70, pp 20-25

Abstract: A rotary kiln can be looked upon as a sequence of two objects for automatic control. The first section heats the material to the sintering temperature by heat exchange between the flows of the heat transfer medium and the material. The physical and chemical processes of sintering occur in the second section. Therefore, the automatic control system for a rotary kiln must consist of two systems. The measuring devices used in such a dual system to measure temperature in the sintering zone at input of raw material are described. In addition to checks of temperature and raw material input, the pressure in the hot and cold heads of the furnace, rarefaction in the smokestack, gas flow rate, and gas pressure are checked. A structural diagram of the automatic control system is presented. The automatic testing and
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USSR

KSENDZOVSKIY, V. R., et al, Orneupory, No 3, Mar 70, pp 20-25

control system for the rotary kiln has been checked at the Zaporog refractory plant. The results of the tests have confirmed the effectiveness and economic expediency of using this system for automation of rotary kiln operation.

2/2

Acc. Nr: **AP0034397**

Ref. Code: UR 0297

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 2, pp 151-154

TRANSFERABLE DRUG RESISTANCE IN ENTEROBACTERIA ISOLATED
IN LENINGRAD

Shal'man, S. L.; Tereshin, I. M.

Sanitary and Epidemiological Station, Leningrad Institute for Antibiotics

Experiments on conjugation showed transference of drug resistance in 210 strains of enterobacteria isolated in 1967—1968. A strain of citrobacter was used as a recipient. Simmons citrate agar with antibiotics was used as a selective medium. Transferable resistance was found in 177 strains of enterobacteria (84.29 per cent), including 85.88 per cent of strains with multiple resistance and 77.5 per cent with resistance to one of the antibiotics (mainly tetracycline). Capacity for resistance transference was shown in 76 out of 87 strains of Shigella, 74 out of 88 strains of enteropathogenic Coli bacteria and 27 out of 35 strains of saprophytic Coli bacteria. Resistance of Shigella Zonne to neomycin, noted for the first time in 1967 was also transferable.

D. 12.

REEL/FAME

19711057

USSR

UDC 678.643'42'5.028

MOTOVILIN, G. V., and SHAL'MAN, YU. I.

"Novel Hardener for Epoxy Glues"

Moscow, Plasticheskiye Massy, No 3, 1971, pp 27-29

Abstract: Polyethylenepolyamine (PEPA) consisting of a mixture of amines is widely used as cold hardening glue, however, it shows many undesirable properties. In search for new hardeners, a study was carried out on AP2--a condensate of phenol, formaldehyde and ethylene diamine. AP2 is an aromatic amine with two amino groups--one primary and one secondary. Experiments performed showed that AP2 exhibits high reactivity, it is able to solidify below room temperatures, it does not have to be proportioned accurately, and it is less hygroscopic than PEPA. The increased reactivity of this hardener with epoxy compositions is due probably to the phenolic hydroxyl group. It can be stored in tubes and is satisfactory agent for rapidly hardening epoxy glues.

1/1

USSR

UDC: 621.384.639

ABROSIMOV, N. K., ALKHAZOV, D. G., DMITRIYEV, S. P., YELISEYEV, V. A.,
KAMINKER, D. M., KULIKOV, A. V., MIRONOV, Yu. T., MIKHEYEV, G. F.,
RYABOV, G. A., CHERNOV, N. N., SHALYANOV, V. I., KOMAR, Ye. G., MALY-
SHEV, I. F., MONOSZON, I. A., PEREGUF, V. I., ROZHDESTVENSKIY, B. V.,
ROYFE, I. M., SEREDENKO, Ye. V., Physicotechnical Institute imeni A. F.
Ioffe, Academy of Sciences of the USSR, Leningrad, Scientific Research
Institute of Electrophysical Equipment imeni D. V. Yefremov, Leningrad

"The Leningrad Synchrocyclotron for a Proton Energy of 1 GeV"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 41, No 9, Sep 71, pp 1769-1775

Abstract: The paper describes the synchrocyclotron at the Physicotechnical
Institute imeni A. F. Ioffe of the Academy of Sciences of the USSR for a
proton energy of 1 GeV. Proton beam parameters as well as the characteristics
of the main systems of the accelerator are presented. The beam channels are
described, and the layout of the accelerator building is given. The installa-
tion has been in successful operation since 1970. Three tables, two figures,
bibliography of twelve titles.

1/1

- 83 -

UDC 632.954.51:633.16

USSR

SHALNA, A., Voke Branch of the Lithuanian Scientific Research Institute of Agriculture

"Effect of New Herbicides on Individual Weed Species and on Barley Yield"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 1, Jan 70, pp 43-44

Abstract: In field experiments conducted in 1966-1968 at the experimental farm of the Voke Branch of the Lithuanian Scientific Research Institute of Agriculture the author studied the effect of new combined herbicides, viz. pesko-T, banlen and kombilen, on various species of weeds and on barley yield. The results showed that the effectiveness of pesko-T increases with dosage (1.5-2.0 kg/ha). The preparation almost completely destroys dicotyledonous annual and biennial weeds and 93-95 percent of perennials, but has little effect on monocotyledonous weeds. Pesko-T has no negative effect on barley growth or development. Banlen is most effective against dicotyledonous weeds

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USSR

UDC 616-008.922.1.04-092.9-085.835.3-07:616.12-073.97

YUSHKOV, M. A., SHAL'NEV, B. I., and EYGELES, A. M., Institute of Clinical and Experimental Surgery, Ministry of Health USSR, Moscow

"Electrocardiogram Indicators in Dogs Subjected to Intravenous Administration of Oxygen Microemulsion Under Severe Hypoxia"

Moscow, Eksperimental'naya Khirurgiya i Anesteziologiya, No 1, Jan/Feb 72, pp 88-90

Abstract: Severe hypoxia in dogs was brought about by a ventilation of lungs with nitrous oxide, or by asphyxia. In conjunction with hypoxia all dogs were given an intravenous injection of oxygen microemulsion. The state of the animal organism under these circumstances was checked by ECG. A ventilation of the lungs with N₂O for 12 min produced the following changes in the ECG: the R was decreased ($P < 0.05$) in 9 min, the S wave increased ($P < 0.05$) in 12 min, the voltage of the T wave increased ($P < 0.001$) in 12 min and the wave changed from 2 mm at the beginning of the experiment to 7 mm. These changes can be attributed to oxygen losses from the microemulsion during its passages through the lung vessels. On the other hand, it is quite possible that oxygen in alveoli was replaced by nitrogen or N₂O, followed by embolism of the lung vessels and the development of myocardial hypoxia. Asphyxia produced changes in the heartbeat by establishing a nodal rhythm for 3 min

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USSR

YUSHKOV, M. A., et al., Eksperimental'naya Khirurgiya i Anesteziologiya, No 1, Jan/Feb 72, pp 88-90

after the start of the experiment, decreased the P wave ($P < 0.05$) to 0.6 mm in 15 min, and increased the P-Q interval ($P < 0.05$). The latter was observed only during the first minute of asphyxia. There were no reliable changes present in the QRS deflection, neither with respect to its duration, nor its voltage during the entire 18 min of asphyxia accompanied by the intravenous injection of oxygen. Under these conditions the most prominent changes were in the T wave dynamics; its voltage increased from the first minute of the experiment and remained at this level. This is attributed to respiratory acidosis. Bleeding of animals during asphyxia and intravenous injection of oxygen produced only insignificant changes in the electrocardiogram.

2/2

- 45 -

USSR

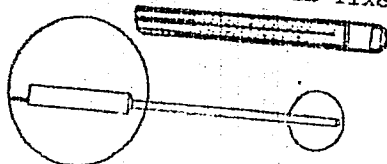
UDC: 615.473.9:615.832.9

~~SHAL'NIKOV, A. I.~~, ZYUKIN, N. A., GDOVSKIY, V. A., LUR'YE, Yu. Yu., MASLOV, F. M., FREYDOVICH, A. I., Institute of Physical Problems imeni S. I. Vavilov

"A Device for Directional Freezing of Tissues"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratztsy, Tovarnyye Znaki, No 12, Apr 72, Author's Certificate No 333951, Division A, filed 11 Nov 70, published 30 Mar 72, p 19

Translation: This Author's Certificate introduces a device for directional freezing of tissues which contains a vacuum-insulated vessel holding two parallel tubes for delivery and removal of a cooling agent. The device also contains a heat-insulation liner, a charcoal getter and a tip. As a distinguishing feature of the patent, in order to freeze tissues arranged eccentrically relative to the longitudinal axis of the device, a wire helix with high heat conductivity is placed in fixed contact with the tip.



USSR

ACCESSION NR: AP3009592

3/0204/63/000/015/0046/0046

AUTHOR: Shal'nikov, A. I.

TITLE: Sorbing screens

SOURCE: Byul. izobret. i tovarn. znakov, no. 15, 1983, 48

TOPIC TAGS: vacuum, ultrahigh vacuum, aluminum, metallic aluminum, helium, liquid helium

ABSTRACT: Sorbing screens have the special feature that, for the purpose of obtaining an ultrahigh vacuum, they are made from metallic aluminum, cooled by liquid helium and covered by a highly-dispersed adsorption oxide film.

ASSOCIATION: none

SUBMITTED: 15Jan82

DATE ACQ: 08Nov83

ENCL: 00

SUB CODE: PH, SD

NO REF SOV: 000

OTHER: 000

Card 1/1

1/2 011
UNCLASSIFIED
TITLE--PURITY OF LIQUID HELIUM -U-
PROCESSING DATE--27NOV70
AUTHOR--(02)-ABRIKOSOVA, I.I., SHALNIKOV, A.I.
COUNTRY OF INFO--USSR
SOURCE--PRIB. TEKH. EKSP. 1970, (2), 242-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--AEROSOL, CHEMICAL PURIFICATION, FILTRATION, HELIUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/1454
STEP NO--UR/0120/70/000/002/0242/0243
CIRC ACCESSION NO--AP0135125
UNCLASSIFIED

2/2 011
CIRC ACCESSION NO--AP0135125

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. I. V. PETRYANOV, ET AL. FILTERS (1968), USED FOR REMOVING AEROSOLS FROM GASES, ARE RECOMMENDED FOR PURIFICATION OF LIQ. HE FROM HIGHLY DISPERSED SUSPENDED MATTER. THESE FILTERS SHOULD BE LOCATED AT THE EXIT OF ABSORPTION TRAPS IN THE LOW TEMP. ZONE. FACILITY: FIZ. FAD., MOSK. GOS. UNIV., MOSCOW, USSR.

UNCLASSIFIED

UNCLASSIFIED

Acc. Nr:

AP0043582

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy
Fiziki, 1970, Vol 58, Nr 2, pp 522-527

WEAK FERROMAGNETISM IN NiCO_3

N. M. Kreines, T. A. Shalnikova

The static magnetic properties of a NiCO_3 single crystal are investigated in the 4.2 — 40° K temperature range. The transition point of the weak ferromagnetic state, $T_N = 25.2^\circ \text{K}$, is found. Induction of antiferromagnetic ordering in the vicinity of the transition point is studied. The temperature dependence of the NiCO_3 spontaneous ferromagnetic moment is measured. The main parameters characterizing the properties of the three carbonates, MnCO_3 , CoCO_3 , and NiCO_3 , are compared.

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REEL/FRAME
19762054

18 DI

USSR

UDC 621.396.6-181.5(088.8)

BEHOZOVSKIY, M. G., RUKAVISHNIKOV, V. V., KRYLOVA, V. Ye., SHAL'NOV, S. N.

"A Device for Welding Bulk Conductors to the Contact Areas of Solid Circuits"

USSR Author's Certificate No 259208, Filed 26 Jun 68, Published 26 Apr 70 (from
RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10V166 P)

Translation: A device is proposed for welding bulk conductors to the contact areas of microcircuits. To simplify the operation, increase productivity and improve welding quality, the holder fork and welding electrode are fastened to two levers which are interconnected and move simultaneously, the travel of these levers being varied by means of a regulating screw.

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1/2 028 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--EFFECT OF AN INITIATOR AND AN ACCELERATOR ON THE THIXOTROPIC
PROPERTIES OF A POLYESTER RESIN WITH AEROSIL ADDITIVES -U-
AUTHOR-(03)-LAVRISHCHEV, L.P., TRAPEZNIKOV, A.A., SHALOPALKINA, T.G.
COUNTRY OF INFO--USSR
SOURCE--LAKOKRASOCH, MATER. IKH PRIMEN. 1970, (1), 10-12
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--POLYESTER RESIN, FILLER, THIXOTROPY, ORGANOCOBALT COMPOUND,
MECHANICAL FAILURE, MATERIAL DEFORMATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0430 STEP NO--UR/0303/70/000/001/0010/0012
CIRC ACCESSION NO--AP0119366
UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119366

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRESS DEFORMATION DIAGRAMS OF SOLNS. OF POLYESTER RESIN PN 1 CONTG. AEROSIL IN STYRENE SHOWED THAT THE PRESENCE OF CO NAPHTHENATE (I) INCREASED THEIR THIXOTROPY. THE ADDN. OF CUMENE HYDROPEROXIDE AS WELL AS I TO THESE SOLNS. GAVE LESS VISCOUS SOLNS. AT REST AND SLOWER RECOVERY TIMES AFTER THE COMPLETE SOLN. STRUCTURE MCECH. BREAKDOWN.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--DISTANCE BETWEEN THE ENDS OF MACROMOLECULES -U-
AUTHOR--SHALTUPER, G.B. S
COUNTRY OF INFO--USSR
SOURCE--ZH. STRUKT. KHIM. 1970, 11(1) 170-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--MACROMOLECULE, DISTRIBUTION FUNCTION, POLYMER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/0302 STEP NO--UR/0192/70/011/001/0170/0173
CIRC ACCESSION NO--AP0111496
UNCLASSIFIED

2/2 019
GIRC ACCESSION NO--AP0111496

UNCLASSIFIED

PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STARTING FROM THE SUPPOSITION THAT IN A POLYMER THE DISTANCES BETWEEN THE ENDS OF THE MACROMOLS. HAVE VALUES LIMITED BY THE DISTRIBUTION FUNCTION, THE PROBLEM IS CONSIDERED MATH. A BETA,DISTRIBUTION FUNCTION WAS OBTAINED, WHICH SUPPORTS L. TREOLAR'S VIEWS (1953) AND CONTRADICTS THE "CHAOTIC DISTRIBUTION" POSTULATES OF OTHER AUTHORS (W. KUHN, 1934; H. MARK, ET AL., 1934).

UNCLASSIFIED

SHALAMOV, B.Z.

SPRS 59008

C-73

3

XII-11a. EPITAXIAL DEPOSITION OF GALLIUM PHOSPHIDE FROM THE GAS PHASE USING PHOSPHINE

Article by B. Z. Shalimov, Yu. M. Shaulov, Ye. A. Syzhenko, M. G. Novoselov, I. I. Shchegolev, V. P. Prokhorov, M. I. Shtern, Zh. I. Krasovskiy, Krasnodar, 12-17 June 1977, p. 1761

This paper was devoted to the development of the method of epitaxial growth of gallium phosphide using chlorine and phosphorus hydrides. The reactions for the growth rates of the epitaxial films of GaP as functions of the variable technological parameters of the process were found: the PH_3 , HCl and H_2 consumption, the temperature of the gallium source and the growth temperature. By processing the relations obtained, the effect of the composition of the gas phase on the epitaxial growth rate and on the quality of the growing layers was determined. The composition of the gas phase was varied by varying the concentrations of the active components of the phosphorus and gallium monochloride reactions. The equations were obtained which relate the controlled process parameters to the epitaxial growth rate:

$$W = k_1 \left(\frac{C_{GaCl_3}}{C_{GaCl_3} + C_{GaCl_3}^0} \right)^n + k_2$$

$$W = k_1 \left(\frac{C_{GaCl_3}}{C_{GaCl_3} + C_{GaCl_3}^0} \right)^n + k_2$$

$$W = k_1 \left(\frac{C_{GaCl_3}}{C_{GaCl_3} + C_{GaCl_3}^0} \right)^n + k_2$$

where C_{GaCl_3} , $C_{GaCl_3}^0$ are the concentrations of the gallium monochloride and the phosphorus respectively;

T is the substrate temperature;

k_1 , k_2 are the constant coefficients corresponding to the various crystallographic directions of growth.

The maximum growth rate of the epitaxial films of GaP occurs for concentrations of $C_{GaCl_3} = 4.5 \cdot 10^{-3}$ moles/l and $C_{GaCl_3}^0 = 15 \cdot 10^{-3}$ moles/l of H_2 and a growth temperature of $T = 1,043^\circ K$. The metallographic, x-ray and

SPKS 58208

6.73

XII-11b. KINETIC STUDIES OF THE GALLIUM TRANSPORT PROCESS BY GAS-PLASMA HCl WHEN SYNTHESIZING SEMICONDUCTOR COMPOUNDS OF THE Al_{1-x}Bi_x TYPE

Article by B. Z. Shalunov, Yu. Kh. Shaulov, Te. A. Ryabenko, Moscow; Novosibirsk; Izvestiya Akad. Nauk SSSR, Seriya Khim. Nauk, 1972, No. 1, p. 155.

The structural and electrophysical properties of semiconductor compounds obtained in the gas transport process essentially depend on the composition and the isolation of the active reaction components. In the case of gallium-containing compounds, one of the active components is gallium monochloride. In the overwhelming majority of cases, GaCl₃ is synthesized directly during the process of growth of the reaction of interaction of gaseous HCl with gallium. The proposed report is devoted to the results of an experimental determination of the kinetic laws of the process of gallium transport by hydrogen chloride and, namely, determination of the gallium transport rate by hydrochloride formation rate and the study of the gas composition in the zone of hydrochloride formation of gallium. The gallium transport rate is described by the equation

$$R_{Ga} = 0.12 \cdot 10^{-3} \cdot G_{HCl} (T - 600)^{1/2},$$

where R_{Ga} is the transport rate, moles/hr;

G_{HCl} is the hydrogen chloride consumption rate, liters/hr;

T is the hydrochlorination temperature, °K.

In order to estimate the formation rate of GaCl₃, the following empirical relation was obtained

$$R_{Ga} = 2.04 \cdot 10^{-3} \cdot (G_{HCl} \cdot 0.5)^{1/2} \cdot \left(1 - \frac{T - 600}{T - 1000} \right)$$

An estimate was made of the composition of the gas phase which, depending on the hydrogen chloride consumption and the hydrochlorination varies from GaCl₃ to GaCl₂. The optimal process conditions for hydrochlorination of gallium were found for which the GaCl₃ yield approaches 100 percent.

AA051891

UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent,
2/70

244596

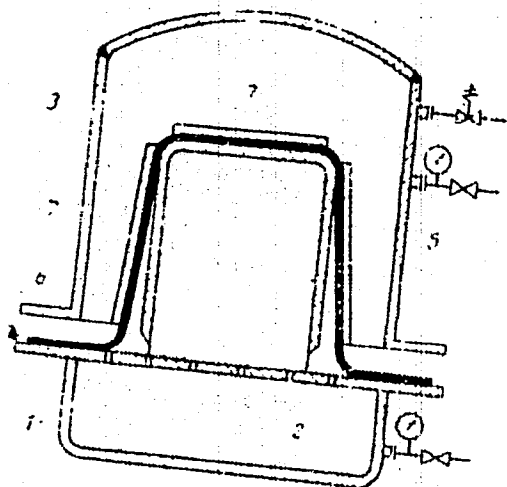
PRODUCTION PRESS FOR GLASS FIBRE
REINFORCED PLASTICS

items ensures high grade surface by means of an elastic membrane (6) fitted with metal plates (7) which load the blank so as to smooth out uneven places. The plunger (5) is covered in a parting layer and an upper filler impregnated with binder. The blank is then covered in the parting film, the membrane placed in position with the platens and moved onto the press table (2). The load chamber (3) is lowered and the clamps locked shut and vacuum created, leading to the press operation, smoothing etc. The clamps are opened and the formed blank removed.

21.2.67. as 1135529/23-5, BRESLER, V.A. and SHALUN, G.B. (7.10.69.) Bul. 18/28.5.69. Class 39a² Int. Cl. B 29c.

19820366

AA0051891



19820367

USSR

KONYUKHOV, V. K., MATROSOV, I. V., PROKHOROV, A. M., SHALUNOV, D. T., and SHIROKOV, N. N., Physics Institute imeni P. N. Lebedev, Academy of Sciences USSR

"Continuous Gasdynamic Laser With a Mixture of Carbon Dioxide, Nitrogen, and Water"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 12, No 10, 20 Nov 70, pp 461-464

Abstract: This article reports that in a supersonic wind tunnel to which a heated mixture of carbon dioxide and nitrogen with a small quantity of water was blown there was observed an amplification of infrared radiation, and after installation of an optical resonator in the working portion of the tunnel a generation effect was obtained. Studies of the amplification coefficient of a supersonic flow ($M = 4-5$) were made in a wind tunnel described previously by the authors, with the difference that the gas expanded in a wedge-shaped nozzle with an angle of opening of 13° and a length of the supersonic portion of 5 cm. The stagnation temperature was 1000°K , the stagnation pressure was 5 atm, and the dimensions of the critical cross section were 1.5×100 mm. The probing ray of a single-mode, single-frequency CO_2 laser was directed parallel to the greater dimension of the

USSR

KONYUKHOV, V. K., et al, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 12, No 10, 20 Nov 70, pp 461-464

critical cross section and intersected the gas flow at the point of emission from the nozzle. A study of the change in the absorption coefficient and the amplification of the signal of the CO₂ laser with time showed that absorption in the gas flow decreases to zero and then amplification appears. Introduction of water molecules causes accelerated relaxation of the CO₂ molecules from the lower laser level as the gas flows in the supersonic portion of the nozzle. The amplification coefficient was measured as a function of water content in the mixture. Measurement of the amplification coefficient in this gas mixture was made at a frequency of 947.73 cm⁻¹ and showed that inversion in the supersonic flow exists for the pair of levels (00°1)-(10°0) but the amplification coefficient amounts to 6·10⁻⁴ cm⁻¹ for a water concentration of 2.1%.

2/2

USSR

UDC 536.24:532.54

SHALVAROVA, S. V., SPODYRYAK, N. T.

"Hydraulic Resistance and Heat Exchange in a Pipe with Flat and Wavy Ray Receivers"

Probl. Teploenerg. i Prikl. Teplofiz. Vyp. 8 [Problems of Heat Engineering and Applied Heat Physics, No 8 -- Collection of Works], Alma-Ata, Nauka Press, 1972, pp 142-147, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 B727 by the author's).

Translation: Results are presented from a study of the hydraulic resistance and heat exchange in a pipe with flat and wavy ray receivers, which can be practically used in existing and newly constructed air heaters. In the pipe with the flat ray receiver, the heat transfer for the range of values of $R = 8,000-65,000$ which was studied is 1.42-1.13 times more intensive than in a hollow pipe; for a pipe with a wavy ray receiver with a $1/2$ period of 1,000 mm and a $1/2$ amplitude of oscillations of 3 mm, the increase is by a factor of 1.61-1.37.

1/1

SHALTYKO, L. G.

Polymer

THE (RHEOLOGICAL) OF POLYMERS
(Symposium in Moscow)

[Article by Doctor of Physical and Mathematical Sciences A. N. Molkin, Moscow, *Yekhnik Akademii Nauk SSSR, Russian, Vol. 42, No. 8, August 1972, pp 119-121*]

Rheological investigations are being developed in the USSR at the present time; firstly, as a component part of general physicochemical work pursuing the goal of establishment of a correspondence between the macroscopic properties of a substance and its microscopic properties and, secondly, as a connection of the mechanics of continua which is interested in finding and in solving the corresponding boundary problems and their application to analysis of concrete technological processes. At the regular (Seventh) symposium on the rheology of polymers, organized by the Institute of Petrochemical Synthesis (Imeni A. V. Topchiyev of the AS USSR) and held on 10-14 April in Moscow, the main attention was given to the first direction of investigation. Participating in the sessions were over 500 persons, including a group of scientists from East Germany, Poland, Czechoslovakia, Bulgaria, about 100 reports were heard. Discussed at the symposium was a broad complex of problems connected with the system of physical chemistry and mechanics of polymers, including the physical nature and mechanism of relaxation effects in macromolecular chains, and the construction of mechanical models for the quantitative description of the behavior of a polymer under different conditions of deformation with detailed comparison of the molecular parameters of reliably characterized samples and their viscoelastic properties. Discussed with special interest was the problem of the liquid crystalline state and the influence of the physical structure of the system on its rheological properties.

The symposium was opened with the addresses of greeting of K. A. Andrianov and A. Yu. Ishlinskii, who emphasized the

12
comprehensive importance of rheological investigations to polymer sciences as a whole and numerous applications of high molecular components and compositions based on them for structural purposes. Then was heard the survey report of A. V. Vysotskiy, who sketched contemporary concepts of the connection of the molecular structure and rheological properties of polymers. Systematic investigations of the viscoelastic properties and fluidity of monodisperse polymers with different flexibility of the chain, conducted in recent years, have made it possible to quantitatively estimate the role of the length of the molecular chain in manifestations of mechanical properties characteristic of polymeric systems. In particular, the limiting conditions of deformation, when the polymer still preserves fluidity and can be processed in stable conditions, have been established. Another aspect of that problem is connected with the determination of general regularities of the transition from the glass into the highly elastic state as a function of the intensity of deformation and with finding a correlation between the behavior of the polymer in different states and of its structure.

The reports of Iu. Ya. Grish, G. M. Vinogradov, V. V. Anisimov and others were devoted to general problems of polymer physics in connection with study of the processes of plastic and dielectric relaxation in different physical states and evaluation of the correspondence of those processes with the conformational properties of polymeric chains. Also belonging to the same "physical" direction in rheology was the report of S. Ya. Frenkel on the problem of phase transformations arising as a result of deformation and their influence on the conditions and regime of flow of polymeric systems.

In a number of reports the structure of fluid polymers and the influence of the structure of the system on its rheological properties were discussed. Thus, A. A. Jurek discussed in detail the correspondence of the structure and viscosity of solutions of polymers. The report of S. E. Radkev and co-authors presented the results of study of the rheological properties of anisotropic solutions of rigid-chain polymers which can form a liquid crystalline phase. Possible models of liquid crystals were examined by I. V. Shalimov and a hydrodynamic theory of their behavior was proposed by E. L. Aep and A. N. Bulgakov. Structural problems connected with the liquid crystalline order were presented in survey form by I. G. Chistyakov, and the application of these concepts to the description of the intra- and submolecular liquid crystalline order was examined in the report of V. N. Tsvetkov and co-authors.

Also related to problems of polymer physics was the report of A. A. Jurek (Poland), who told about new results obtained by him in the theory of polymeric lattices. V. N.

USSR

UDC 535

SHALTYKO, L. G., SHEPELEVSKIY, A. A., FRENKEL', S. Ya.

"Small-Angle Scattering of Light in Liquid Crystals"

Uch. zap. Ivanov. gos. ped. in-t (Scientific Notes of Ivanovo State Pedagogical Institute), 1972, Vol. 99, pp 124-146 (from RZh-Fizika, No 10, Oct 72, Abstract No 10D783)

Translation: The scattering intensities of polarized light from three models of optically anisotropic structures encountered in lyotropic liquid crystals are calculated. These were an optically anisotropic cylinder with a cholester distribution of the polarization capacity within it, an optically anisotropic cylindrical shell, and an optically anisotropic torus. The corresponding diffraction formulas were obtained. The theoretical distribution of intensity obtained by computer tabulation of the functions satisfactorily corresponds to the experimentally obtained pictures of small-angle scattering of light from lyotropic liquid crystals of poly- γ -benzyl-L-glutamate. 34 ref. Resume.

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- 67 -

USSE

UDC 621.315.592:546.19'681

KOVTONYUK, N. F., KURBATOV, L. N., NOZDRIN, V. V., ORLOV, V. S., RYABENKO, Ye. A., RASKIN, A. A., ROSTUNOVA, R. P., SOLOV'YEV, A. A., SEVAST'YANOV, V. G., UMN'YAGIN, A. M., SHALUMOV, B. Z., and SHAULOV, Yu. Kh.

"Some Problems of a Technological Formulation of the Process of Obtaining Epitaxial Films of Gallium Arsenide by the Gas Phase Method"

V sb. Protsessy rosta kristallov i plenok poluprovodn. (Procedures for the Growth of Semiconductor Crystals and Films -- Collection of Works), Novosibirsk, 1970, pp 341-350 (from RZh-Elektronika i yeye primeneniye, No 7, July 1971, Abstract No 7B130)

Translation: The epitaxial films of GaAs obtained were produced by the gas phase method with the use of AsH₃, Ga, and HCl. GaAs wafers served as substrates. The surface of a wafer was subjected to chemical--mechanical processing and etching with H₂SO₄: H₂O₂: H₂O in the ratio 3: 1: 1. Synthesis of the GaAs was conducted in a reaction apparatus which was thoroughly scavenged by H₂ and etched by HCl at 550° C for 30 minutes. After cooling, the Ga was loaded into the chamber. The chamber was heated to a temperature of 650° C for activation of the Ga surface. After reduction of the temperature to 100--150° C, the GaAs substrate was introduced into the reaction zone. After heating the Ga area and the GaAs area, etching of the GaS was performed by HCl gas in a stream of AsH₃ and H₂. The films were doped by Se.

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JSSR

KOVTONYUK, N. F., et al., Protsessy rosta kristallov i plenok poluprovodn.
(Procedures for the Growth of Semiconductor Crystals and Films -- Collection
of Works), Novosibirsk, 1970, pp 341-350 (from RZh-Elektronika i yeye
primeneniye, No 7, July 1971, Abstract No 7B130)

The best specimens of film had n-type conductivity and a mobility of 4000--5000
 $\text{cm}^2/\text{v}.\text{sec}$. Films doped by Se had a concentration of $5 \cdot 10^{17}$ -- $5 \cdot 10^{18}$ at/ cm^3 and
a mobility of 2000 $\text{cm}^2/\text{v}.\text{sec}$. 8 ref. V.B.

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- 56 -

acc. Nr:

AAO108719

Abstracting Service: 3-7C

Ref. Code:

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

243755 WELDING MACHINE FOR STRAIGHT T-BEAMS has welding heads, positioning rollers and driving rollers all mounted on a beam which can be pivoted in the vertical plane. This imparts a bending stress to the T-beam being welded, so counteracting the opposite stress due to welding.

30.3.67 as 1145211/25-27. M.I. SHALYAPIN, S.N. ADAMENKO & A.M. PALLER et al. (3.10.69) Bul 17/14.5.69. Class 21h. Int.Cl. B 23k.

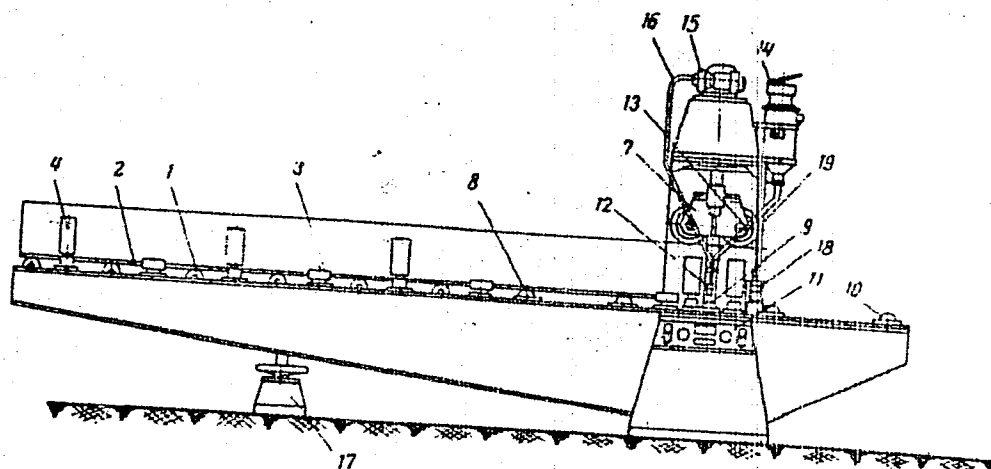
AUTHORS: Shalyapin, M. I.; Adamenko, S. N.; Paller, A. M.; Kaprantsev, I. G.

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REEL/FRAME

19900492

AA0108719



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USSR

UDC 537.311.33

PETROV, V. M., BELOV, V. V., SHALYAPINA, L. M., and FIGUROVSKIY, YE. N.,
Moscow Institute of Steel and Alloys

"Identification of Narrow-Zone Alloys with Variable Composition"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 10,
No 3, Mar 74, pp 418-422

Abstract: Single crystals of $\text{Cd}_x\text{Hg}_{1-x}\text{Te}$ ($0.2 \leq x \leq 0.5$), with electron concentrations (difference between donor and acceptor concentrations) at 77°K equal to approximately 10^{15} - 10^{14} cm^{-3} and mobility of about 10^5 - $10^3 \text{ cm}^2/\text{v-sec}$, were used to study the spectral distribution of quantum yield of the internal photoeffect. The lifetime of charge carriers and rate of surface recombination were determined. A table lists the possible methods of identifying narrow-zone alloys and the smallest sample size that can be used for each method. The prospective use of the quantum yield growth effect is indicated in the short-wave region for identifying small samples of the single crystals used and other narrow-zone phases of variable composition. Two figures, one table, 18 bibliographic references.

1/1

1/2 019 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ROLE OF ADRENERGIC MEDIATION IN THE MECHANISM OF RESERPINE ACTION
ON THE HYPOPHYSEAL ADRENAL ACTIVITY -U-
AUTHOR--SHALYAPINA, V.G.
COUNTRY OF INFO--USSR
SOURCE--PROBL. ENDOKR INOL. 1970, 16(2), 60-4
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BLOOD PLASMA, CORTICOSTEROID, RESERPINE, NOREPINEPHRINE,
CATECHOLAMINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/0600 STEP NO--UR/0502/70/016/002/0060/0064
CIRC ACCESSION NO--AP0117828
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117828

ABSTRACT/EXTRACT--(U) GP-O- . ABSTRACT. RESERPINE ADMINISTERED I.P. TO RATS AT 0.25, 1.0, 2.5, OR 5.0 MG-KG REDUCED THE CONTENT OF NORADRENALINE AND INCREASED THE LEVEL OF CORTICOSTEROIDS IN THE PLASMA, WITH THE MAIN EFFECT DUE NOT TO THE EXTENT OF NORADRENALINE CEREBRAL DECREASE BUT TO THE RATE OF ITS RELEASE FROM GRANULES. DEPLETION OF CATECHOL AMINE RESERVES BY RESERPINE DID NOT ALWAYS CHANGE THE NONSPECIFIC HYPOPHYSEAL ADRENAL SYSTEM REACTIONS TO STRESS STIMULATION (ELEC. STIMULATION), DEPENDING ON THE DEGREE OF DEPLETION OF THE FUNCTIONALLY SIGNIFICANT MEDIATOR FRACTION AT THE TIME OF STIMULATION. THIS SUGGESTS THAT CEREBRAL ADRENERGIC STRUCTURES ARE IMPORTANT IN REGULATING ACTH SECRETION. FACILITY: LAB. EKSP. ENDOKRIN., INST. FIZIOL. IM. RAVLOVA, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 612.014.41

TROSHKIN, G. V., and SHLYAPINA, V. G., Laboratory of Respiratory Physiology, Institute of Physiology imeni I. P. Pavlov, Academy of Sciences USSR

"Indices of Sympathetic Adrenal Activity and Gas Exchange in Animals Exposed to High Partial Pressure of Oxygen"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, No 1, 1970, pp 119-122

Abstract: Exposure of white mice to 60 and 80% oxygen-nitrogen mixtures for 10 days reduced the content of norepinephrine in the brain, while elevating the corticosteroid level in the peripheral blood. In 60% oxygen, the norepinephrine content was 1.5 times lower than in controls, and the corticosteroid level rose by 16%. In 80% oxygen, the norepinephrine content was 3 times lower than in controls, while the corticosteroid level rose 47%. In another series of experiments, exposure of animals to 3 and 3.5 atm of oxygen for 1-2 hours also reduced the norepinephrine content of the brain, while raising the blood corticosteroid level. Exposure to 1 atm of oxygen only elevated the blood corticosteroid level.

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USSR.

TROSHKIN, G. V., et al., Leningrad, Fiziologicheskii Zhurnal
SSSR imeni I. M. Sechenov, No 1, 1970, pp 119-121

Thus, the experimental results showed that increasing the oxygen concentration of the atmosphere intensifies sympathetic adrenal activity. Oxygen under pressure has a similar effect, but the changes in content of norepinephrine and the corticosteroids appears sooner.

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UNCLASSIFIED

TITLE--INDICES OF SYMPATHIC ADRENAL ACTIVITY AND GAS METABOLISM UNDER
INCREASED OXYGEN PRESSURE IN ANIMALS -U-
AUTHOR--TROSHKINA, G.V., SHALYAPINA, V.G.

COUNTRY OF INFO--USSR

SOURCE--FIZIOLOGICHESKIY ZHURNAL, 1970, VOL 56, NR 1, PP 119-122

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BRAIN, OXYGEN METABOLISM, MOUSE, STERCID, BLOOD CHEMISTRY,
HIGH PRESSURE EFFECT, ADRENALINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1977/0680

STEP AC--UR/0239/70/056/C01/0119/0122

CIRC ACCESSION AC--APCC44194

UNCLASSIFIED

ACC. Nr:

AP0044194

Ref. Code: UR 0239

PRIMARY SOURCE: Fiziologicheskii Zhurnal, 1970, Vol 56,
Nr 1, pp 119-122

INDICES OF SYMPATHO-ADRENAL ACTIVITY
AND GAS METABOLISM UNDER INCREASED OXYGEN PRESSURE IN ANIMALS

By G. V. Troshikhin, and V. G. Shalupina

From the Laboratory for Physiology of Respiration, I. P. Pavlov Institute of Physiology,
USSR Ac. Sci., Leningrad

A decrease in noradrenaline content in brain tissue and a rise in corticosteroid level in peripheral blood occur in mice following 10-days exposure to gas media with 60% oxygen. In an 80% hyperoxic mixture similar shifts are considerably deeper manifested. Unidirectional changes in the same indices were revealed following the exposure of animals to shortterm pressure of 3-3.5 atm oxygen. 60% oxygen content in the media fails to exert any significant toxic effect and 80% content results in a lowering of rectal t° and gas metabolism in mice. When exposed to 3-3.5 atm oxygen for 1 hr mice develop convulsions.

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REEL/FRAME
19770680

Physiology

USSR

UDC 612.27+612.45

YEREMEYEV, N. S., TROSHKIN, G. V., and SHALYAPIKA, V. G., Laboratory of Respiratory Physiology, Institute of Physiology imeni I. P. Pavlov, Academy of Sciences SSSR, Leningrad

"The Effects of Increased Partial Pressure of Oxygen on the Sympathoadrenal System and Brain Acetylcholine esterase in Animals"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 58, No 5, 1972, pp 768-772

Abstract: In white mice exposed to 60 and 80% oxygen at atmospheric pressure for 10 days and to pure oxygen at partial pressures 1.3, 3, and 3.5 atm for 2 hrs, noradrenaline concentration in the brain decreases while adrenocorticoid concentration in the blood increases. In rats, exposure to oxygen at atmospheric pressure causes an increase while exposure to oxygen at higher partial pressures (convulsive levels) causes a decrease in acetylcholinesterase activity in the cerebral cortex, subcortex, brain stem, medulla oblongata, and cerebellum. It is concluded that excess oxygen induces a general stress reaction and a specific reaction in the body and that oxygen toxicity is in a large measure due to disturbances in the synthesis and destruction of neuronal transmitter substances.

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USSR

SHALYAPINA, Z. M.

"Semantic Elements as a Basis for Lexicographic Description: General Principles and Formal Apparatus"

Mash. Per. i Prikl. Lingvist. [Machine Translation and Applied Linguistics -- Collection of Works], No 15, Moscow, 1972, pp 54-98 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V765, by the author).

Translation: The general principles of description of values of words using semantic elements, artificially separated units of meaning having their own paradigmatic and syntagmatic properties, are formulated. A formal apparatus is suggested for recording of interpretation of words, relating the properties of the semantic elements with the properties of the words whose interpretations include these elements, and allowing strict definition of concepts of a semantic class in the semantic interpretation of the syntactical valences of words.

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- 117 -

USSR

SHALYAPINA, Z. M.

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- 117 -

USSR

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- 117 -

USSR

SHALYAPINA, Z. M.

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Translation: The general principles of description of values of words using semantic elements, artificially separated units of meaning having their own paradigmatic and syntagmatic properties, are formulated. A formal apparatus is suggested for recording of interpretation of words, relating the properties of the semantic elements with the properties of the words whose interpretations include these elements, and allowing strict definition of concepts of a semantic class in the semantic interpretation of the syntactical valences of words.

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- 117 -

UNCLASSIFIED

PROCESSING DATE--17JUL70

TITLE--FREQUENCY INDEPENDENT FARADAY EFFECT IN DYSPROSIUM AND TERBIUM IRON
GARNETS -U-

AUTHOR--CHETKIN, P.V., SHALYGIN, A.N.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERC. TELA 1970, 12(2), 503-6

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, PHYSICS

TOPIC TAGS--GARNET, SINGLE CRYSTAL, IR SPECTRUM, THERMAL EFFECT, TERBIUM
COMPOUND, DYSPROSIUM COMPOUND, FARADAY EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1979/2001

STEP NC--UR/0181/70/012/002/0503/0506

CIRC ACCESSION NC--AP0048279

UNCLASSIFIED

Acc. Nr.

AP0048279

Abstracting Service:
CHEMICAL ABST. 5/70

Ref. Code

4R0181

105277k Frequency-independent Faraday effect in dysprosium and terbium iron garnets. Chetkin, M. V.; Shalygin, A. N. (Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR). *Fiz. Tverd. Tela* 1970, 12(2), 503-6 (Russ). Investigation was carried out of the Faraday effect in oriented single-crystal $Dy_2Fe_5O_{12}$ and $Tb_2Fe_5O_{12}$ in the ir spectral region. The temp. dependence was studied of the Faraday effect in $Dy_2Fe_5O_{12}$. At 80-290°K the Faraday effect is isotropic. A magnetooptic method is proposed for detn. of magnetic crystallographic anisotropy. A. Libackyj

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REEL/FRAME
19792001

18 1/2

USSR

GINZBURG, I. P., KUKLEV, Ye. A., SHALYGIN, A. S.

"Selection of Optimal Parameters of Control Systems for Flight Vehicles with Random Perturbations"

Izbr. Tr. Vses. Mezhvuz. Simpoz. po Prikl. Mat. i Kibernet, Gor'kiy, 1967
[Selected Works of All-Union Interdepartmental Symposium on Applied Mathematics and Cybernetics, Gor'kiy, 1967], Moscow, Nauka Press, 1973, pp 157-160 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V245, by the authors).

Translation: Methods of solution of problems of analysis and synthesis of dynamic systems describing the motion of flight vehicles with random perturbations are studied. The optimal parameters of the systems are defined by methods of random or directed search. Examples are studied.

1/1

- 29 -

USSR

UDC 629.7.015:629.7.054:621.391.825

KUKLEV, Ye. A., SHALYGIN, A. S.

"Investigation of Flight Dynamics of an Aircraft With Autopilot in the Presence of Interferences"

Kazan', Izvestiya Vysshikh Uchebnykh Zavedeniy, Aviatsionnaya Tekhnika, No 3, 1971, pp 96-98

Abstract: The problem of evaluating the efficiency and interference protection of a closed aircraft autopilot control system in the presence of random disturbances and various interferences is considered. This consideration is based on methods of statistical dynamics. The combined affect of certain interferences passing into the control circuit produces disturbances in the control system which are a mixture of noises and useful signal at the input of one or more measuring instruments of flight parameters. A flight of a passenger aircraft in a longitudinal plane at a given altitude is considered as an illustrative example. Altitude stabilization is achieved by the autopilot on the basis of signals from angular parameter and speed meters and signals from the radio altimeter, in the presence of interferences. Dispersions of phase coordinates and probability of certain events are taken as

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USSR

KUKLEV, Ye. A., et al, Izvestiya Vysshikh Uchebnykh Zavedeniy, Aviatsionnaya Tekhnika, No 3, 1971, pp 96-98

evaluating criteria. Calculations show the expediency of the approach used for evaluating the efficiency of control systems in the presence of interferences, and for comparing the quality of such systems on the basis of interference protection criterion.

2/2

- 14 -

1/2 029
UNCLASSIFIED
TITLE--INCREASING THE WEAR RESISTANCE OF VULCANIZED RUBBER -U-
AUTHOR--(04)--NOVIKOV, A.S., NUDELMAN, Z.N., SHALYGIN, G.F., PROKUDIN, I.P.
COUNTRY OF INFO--USSR
SOURCE--GER. 1,694,680
DATE PUBLISHED--21MAY70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--WEAR RESISTANCE, CHLOROPRENE, ACRYLONITRILE, BUTADIENE,
COPOLYMER, SYNTHETIC RUBBER, ANTIMONY FLUORIDE, FLUORINATION, CHEMICAL
PATENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1541
CIRC ACCESSION NO--4A0128936
STEP NO--GY/0000/70/000/000/0000/0000
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0128936

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. THE WEAR RESISTANCE OF VULCANIZED
ACRYLONITRILE, BUTADIENE COPOLYMERS AND CHLOROPRENE IS IMPROVED BY
FLUORINATING THE RUBBER SURFACE WITH ME SUB2 CO SOLNS. OF SBF SUB5 UNDER
PRESSURE AT 50-100DEGREES FOR 5-20 MIN. FACILITY: SCIENTIFIC
RESEARCH INSTITUTE OF THE RUBBER INDUSTRY.

UNCLASSIFIED

052

UNCLASSIFIED

PROCESSING DATE--020017

TITLE--CORRELATION OF THE BEHAVIOR OF RIGID CHAIN POLYMERS WITH THEIR
STRUCTURE. AROMATIC POLYBENZOXAZOLES CONTAINING SEVERAL OXYGEN OR SULFO-
AUTHOR--(05)--YAKUBOVICH, V.S., ASKADSKIY, A.A., SHALYGIN, G.F., MALINSKIY,
YU.M., KZHELSKIY, A.I.
COUNTRY OF INFO--USSR

S

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(3) 656-62

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POLYMER STRUCTURE, POLYCONDENSATION, BENZENE DERIVATIVE,
HETEROCYCLIC OXYGEN COMPOUND, HETEROCYCLIC NITROGEN COMPOUND, ORGANIC
AZOLE COMPOUND, POLYAMIDE COMPOUND, SULFONE, ELASTICITY, TENSILE
STRENGTH, ELONGATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROJY REEL/FRAE--1992/0297

STEP NO--UR/0459/70/012/003/0656/0662

CIRC ACCESSION NO--AP0111491

UNCLASSIFIED

2/2 032

CIRC ACCESSION NO--AP0111491

UNCLASSIFIED

PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LOW TEMP. POLYCONDENSATION OF 3,3 PRIME, DIHYDROXYBENZIDINE AND OF 4,4 PRIME, DIHYDROXY, 3,3 PRIME, DIAMINODIPHENYL SULFONE WAS CARRIED OUT WITH P, (P, CLCOC SUB6 H SUB4 J) SUB2 C SUB6 H SUB4, P, (P, CLCOC SUB6 H SUB4 S) SUB2 C SUB6 H SUB4, AND (P, CLCOC SUB6 H SUB4 S) SUB2 TO GIVE POLYAMIDES (I). SUBSEQUENT DEHYDRATION OF I GAVE POLYBENZOXAZOLES (II), WHERE R IS DERIVED FROM THE DIACID CHLORIDE AND R PRIME1 IS DERIVED FROM THE DIAMINE). THE PRESENCE OF O, S, OR SO SUB2 BRIDGES IN II INCREASES THE TEMP. RANGE IN WHICH II RETAIN THEIR ELASTICITY, INCREASES THEIR TENSILE STRENGTH AT BREAK AND ELONGATION AT BREAK.

UNCLASSIFIED

Therapy

USSR

UDC 616.932+616-008.97(VIBRIO)-085.332(TETRACYCLINUM)-033

TIMINA, V. P., TUMANOV, F. A., and SHALYGINA, N. B., Central Scientific Research
Institute of Epidemiology, Ministry of Health USSR, Moscow

"Distribution of Tetracycline in Vibrio Carriers and Cholera Patients"

Moscow, Antibiotiki, No 2, 1973, pp 174-178

Abstract: A group of El Tor vibrio carriers (180) received 300,000 or 500,000 IU of tetracycline orally while a series of cholera patients (8) were given 500,000 IU of the antibiotic together with rehydration therapy. The antibiotic was taken at 6-hour intervals. This schedule was sufficient to maintain a therapeutic level of the drug in the serum, but it was much higher in the gastrointestinal tract. Boosting the dose given the carriers from 300,000 to 500,000 IU produced only a slight increase in the amount present in the tissues studied, but the amount excreted with feces increased sharply. The serum tetracycline concentration in the cholera patients with pronounced diarrhea was considerably higher than in the carriers. Those suffering from severe gastroenteritis excreted the antibiotic rapidly, thereby reducing its therapeutic value.

1/1

USSR

UDC 547.752

VINOGRAD, L. KH., SHALYGINA, O. D., BULATOVA, N. N., KOSTYUCHENKO, N. P.,
ZYKOVA, T. N., MIKERINA, A. L., ARUTYUNYAN, G. S., and SUVOROV, N. N., All-
Union Scientific Research Chemical and Pharmaceutical Institute imeni Serge
Ordzhonikidze, Moscow

"Indole Derivatives. Report 72. Addition of Sulfur-Containing Reagents to
Nitroviny lindole"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 5, No 12, Dec 71, pp 15-17

Abstract: The addition of sulfur-containing nucleophilic reagents to unsat-
urated nitro-compounds of the indole series was studied. The addition reactions
of seven new indole derivatives are detailed and the addition products identified.
In-vitro therapeutic tests revealed a weak germistatic activity (500-250
mcg/ml) in 1-benzylmercapto-1-(1'-acety lindolyl-3)-2-aminoethane chloralhydrate
relative to 17 microorganism strains. The study included general effects,
effects on smooth muscles, circulation and respiration body temperature, inter-
action with hexenal and iprazid, antihistaminic, antispasmodic and anesthetic
effects. The compound revealed weak pharmacological activity, weak spasmogenic
action and slightly increased capillary permeability. It appears to promote
the somnifacient effect of hexenal. The LD₅₀ in intravenous administration to
mice is 45 mg/kg. (1 table, 1 biblio. reference)

1/1

009
TITLE--EFFECT OF IRON II SALTS ON THE EXTRACTION OF COPPER II WITH
TRIOCTYLAMMONIUM CHLORIDE FROM CHLORIDE SOLUTIONS -U-
AUTHOR--(03)--IOFFE, E.SH., SHALYGINA, YE.M., ROMAZANOVA, I.I.
COUNTRY OF INFO--USSR
SOURCE--ZH. ANAL. KHIM. 1970, 25(1), 187-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--METAL CHEMICAL ANALYSIS, CHLORIDE, AMMONIUM COMPOUND, IRON,
COPPER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/1900
CIRC ACCESSION NO--AP0118862
STEP NO--UR/0075/70/025/001/0187/0189
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118862

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CU(II) EXTN., IN THE PRESENCE OF
FE(III) IN A LiCl SOLN., WITH A SOLN. OF TRIOCTYLAMMONIUM CHLORIDE IN
XYLENE WAS STUDIED. THE DISTRIBUTION COEFF. E FOR CU INCREASES WITH
INCREASING FE(III) CONCN. THE LINEAR DEPENDENCE BETWEEN LOG E AND LOG
(FE) IS 1. WITH A CHLORIDE EXCESS IN THE PRESENCE OF FE(III), CU(III) IS
REDUCED TO CU(II), WHICH IS READILY EXTD. FACILITY: STATE
SCI.-RES. DES. INST. GIPRONIKEL, LENINGRAD, USSR.

UNCLASSIFIED

1/2 021
UNCLASSIFIED
PROCESSING DATE--04DEC70
TITLE--WIEDEMANN, FRANZ LAW AND MECHANISM OF SCATTERING OF CURRENT CARRIERS
IN N, BISMUTH -U-
AUTHOR--(03)--KUZNETSOV, M.YE., MUZHODABA, V.M., SHALYT, S.S.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(4), 1236-9 (RUSS)
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--SINGLE CRYSTAL, ELASTIC SCATTERING, BISMUTH, TELLURIUM,
CRYSTAL LATTICE, ELECTON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/0221
CIRC ACCESSION NO--AP0127832
STEP NO--UR/0181/70/012/004/1236/1239
UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0127832
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY INTRODUCTION OF TE IMPURITY,
SINGLE CRYSTALS OF BI WERE OBTAINED WITH MONOPOLAR ELECTRONIC COND. THE
ELECTRONIC AND LATTICE COMPONENTS OF THERMAL COND. OF SUCH CRYSTALS WERE
DETD. SEP. ANAL. OF THE WIEDEMANN-GRANZ LAW SHOWED THAT SCATTERING OF
CURRENT CARRIERS HAS A SMALL BUT MEASURABLE INELASTICITY AT
50-120DEGREESK. AT LOWER TEMP., SCATTERING IS COMPLETELY ELASTIC.
FACILITY: INST. POLUPROV., LENINGRAD, USSR.

UNCLASSIFIED

Acc. Nr

AP0048460

Abstracting Service:
CHEMICAL ABST. 570

Ref. Code

UR0449

S

105268h Negative magnetoresistance of n-gallium antimonide.
Matveenko, A. V.; Parfen'ev, R. V.; Shalyt, S. S. (Inst.
Poluprov., Leningrad, USSR). *Fiz. Tekh. Poluprov.* 1970,
4(1), 191-4 (Russ). The magnetoresistance, the Hall effect,
and the elec. resistivity of n-type GaSb single crystal with carrier
concn. of $1.7 \times 10^{17}/\text{cm}^3$ were studied. Neg. magnetoresistance
was found in transverse and longitudinal weak magnetic fields
at 1.4-140°K. This phenomenon may be explained as assocd.
with an addnl. scattering of current carriers on localized electron
spins.
L. Koudelka

1/1

REEL/FRAME
19800168

18A

USSR

UDC 621.382.23.072.2

PAVLENKO, YU.S., SHALYTA, Z.M., SMIRNOV, V.V., LEVOCHINA, I.YE.

"To The Problem Of The Quality Of The P-N Junctions Of Silicon Stabilitrons Prepared By Epitaxial Build-Up"

Elektron.tekhnika. Nauch.-tekhn.sb. Poluprovodn.pribory (Electronics Technology. Scientific-Technical Collection. Semiconductor Devices), 1971, No 5(62), pp 38-45 (from RZh:Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 2B93)

Translation: The parameters are considered of epitaxial p-n junctions in a comparison with the calculated values of the parameters of p-n junctions produced by other methods. It is shown that epitaxial build-up assures the lowest values of the dynamic resistance. The spread of the voltage stabilization in the experiments conducted is characterized by the value of the root-mean-square deviation $\sigma = 8.1$ percent. It is difficult to decrease this magnitude. A method is presented for production of stabilitrons with a small spread of the voltage stabilization by a series connection of two p-n junctions, the voltage stabilizations of which are specially selected. Under specific conditions the cost of an epitaxial p-n junction can be no higher than with alloy and diffusion-alloy. Summary.

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UDC 541.64:678.746:541.12

USSR

RAFIKOV, S. R., DZHILKIBAYEVA, G. M., CHELNOKOVA, G. N., SHALTUPER, G. B., Institute of Organo Elemental Compounds, Moscow, Academy of Sciences USSR, and Kazakh State University imeni S. M. Kirov, Alma Ata, Ministry of Higher and Secondary Specialized Education Kazakh SSR

"Kinetics of the Reaction of Triethyl Phosphite with Linear Halomethylated Polystyrene"

Moscow, Vysokomolekulyarnyye Soyedineniya 12, No 7, 1970, pp 1608-1613

Abstract: The kinetics of the Arbuzov reaction of triethyl phosphite (TEP) with linear iodomethylated polystyrene was studied in carefully purified dioxane over the temperature range 58-97°C. It was found that at temperatures exceeding 70°C, isomerization of TEP accompanies the Arbuzov rearrangement. It was shown that the reaction rate constants in the interaction of TEP with iodomethylated styrene decreases as the reaction proceeds and the apparent activation energy depends on the temperature; it is 17.1 kcal/mole

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